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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,773	09/22/2000	Hans-Christian Haugli	99813-US	7775

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BLANK ROME LLP
600 New Hampshire Avenue N W
Washington, DC 20037

EXAMINER	
MAIS, MARK A	

ART UNIT	PAPER NUMBER
2664	12

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/646,773	HAUGLI ET AL.	
	Examiner	Art Unit	
	Mark A Mais	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 September 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s) NO PTO-892

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 22 June 2004.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on June 23, 2004 was filed after the mailing date of the Application on September 22, 2000. The submission is in compliance with the provisions of 37 CFR 1.56 and 1.97. Accordingly, the examiner considered the information disclosure statement.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-6, 8, 10-14, 17-19, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Panech et al. (USP 5,657,358).

4. With regard to claims 1 and 4, Panech et al. discloses a packet communication system having a control station and a plurality of remote terminals that communicate on demand with said control station over a wireless link, said control station comprising a data port for receiving data packets destined for said terminals **(Fig. 2, digital input from Telco trunk lines 14 are input to a digital switch matrix 25; *see also* col. 1, lines 32-34, col. 8, lines 53-56; col. 9, lines 15-17)**; means for generating a plurality of carriers forming data channels for carrying said data packets **(Fig. 2, plurality of codecs 16 process the digital information received from PBX 15 via switch matrix 25)**; means for assigning said data packets destined for a particular terminal to one or more of said data channels **(Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; *see also* col. 9, lines 54-55)**; means for generating a carrier forming a control channel carrying control information pertaining to said data channels **(Fig. 2, remote-connection processor (RPU) 20 conveys control and data messages to the CCU 18; *see also* col. 10, lines 18-20)**; and means for simultaneously transmitting said carriers carrying said data packets and said control channel to said remote terminals as a radio frequency signal **(col. 9, lines 13-14, at least one of the time division time slots is required for the radio control channel, and, after being passed through the modem 21, is sent to the RF/IF processing unit (RFU) 21, where the IF signal from the modem is converted to an RF signal; and control information is processed either from the control channel or overhead control bits in the voice channels, col. 9, lines 63-65)**; and each of the terminals comprising a receiver for receiving said radio frequency signal **(Fig. 3, antenna 32b, RX RFU 31b, and RX modem 30b)**; an analog-to-digital converter for digitizing said received signal **(Fig. 25, A/D 139; *see***

***also* col. 64, lines 41-47)**; a buffer for storing said digitized received signal **(Fig. 25, FIFO 140)**; and a processing means (digital signal processor (DSP)) for continually monitoring the contents of said buffer to extract control information from said control channel **(Fig. 3, CCU 29)**, and said processing means processing said stored signal to extract said data packet destined for said terminal from one or more of said data channels in response to control information received on said control channel identifying said packet data as destined for said terminal **(Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46)**.

5. With regard to claims 10 and 13, Panech et al. discloses a method of establishing communications between a control station and one or more of a plurality of mobile terminals over a wireless link, comprising generating a plurality of carriers forming channels **(Fig. 2, plurality of codecs 16 process the digital information received from PBX 15 via switch matrix 25)**; dynamically assigning one or more data carriers to a destination terminal **(Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; *see also* col. 9, lines 54-55)**; modulating one or more carriers with packet data for said destination terminal **(base station provides modulation control, col. 8, line 47-49)**; generating a control carrier containing control information pertaining to said modulated carriers **(Fig. 2, remote-connection processor (RPU) 20 conveys control and data messages to the CCU 18; *see also* col. 10, lines 18-20)**; transmitting said data carriers and said control carrier as an aggregate signal (baseband signal modulated onto a radio frequency carrier) to said destination terminal **(col. 9, lines 13-14,**

at least on of the time division time slots is required for the radio control channel, and, after being passed through the modem 21, is sent to the RF/IF processing unit (RFU) 21, where the IF signal from the modem is converted to an RF signal; and control information is processed either from the control channel or overhead control bits in the voice channels, col. 9, lines 63-65); wherein said received aggregate signal is stored in a buffer at said destination terminal **(Fig. 25, FIFO 140)**; said control information is continually extracted from said aggregate signal stored in said buffer; and data is extracted from said buffered signal in response to said control information received on said control channel identifying said packet data as destined for said terminal **(Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46)**.

6. With regard to claims 17 and 19, Panech et al. discloses a mobile terminal comprising a receiver for receiving an incoming signal **(Fig. 3, antenna 32b, RX RFU 31b, and RX modem 30b)**, and an analog-to-digital converter for digitizing said received signal **(Fig. 25, A/D 139; *see also* col. 64, lines 41-47)**; a buffer that stores the digitized received signal **(Fig. 25, FIFO 140)** and a processor (DSP) **(Fig. 3, CCU 29)** which continually monitors the stored signal to extract control information from the control channel and extracts packet data destined for the terminal from one or more of the data channels in response to control information extracted/received on the control channel identifying the packet data as destined for the terminal **(Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station,**

namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46).

7. With regard to claim 22, Panech et al. discloses a packet communications system comprising: a control station **(base station of Fig. 2)** comprising: a processor that generates a plurality of data channels for carrying data packets **(Fig. 2, plurality of codecs 16 process the digital information received from PBX 15 via switch matrix 25)**, assigns the data packets to one or more of the data channels **(Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; *see also* col. 9, lines 54-55)**, and generates a control channel carrying control information pertaining to said data channels **(Fig. 2, remote-connection processor (RPU) 20 conveys control and data messages to the CCU 18; *see also* col. 10, lines 18-20)**; and, a transmitter for simultaneously transmitting the data channels and the control channel as an aggregate signal **(col. 9, lines 13-14, at least on of the time division time slots is required for the radio control channel, and, after being passed through the modem 21, is sent to the RF/IF processing unit (RFU) 21, where the IF signal from the modem is converted to an RF signal; and control information is processed either from the control channel or overhead control bits in the voice channels, col. 9, lines 63-65)**; and, a plurality of remote terminals that communicate with said control station **(Fig. 1, multiple terminals, col. 7, lines 45-51)**, each of said remote terminals comprising: a receiver receiving the aggregate signal **(Fig. 3, antenna 32b, RX RFU 31b, and RX modem 30b)**; an analog-to-digital converter digitizing the received aggregate signal **(Fig. 25, A/D 139; *see also* col. 64, lines 41-47)**; a buffer storing the digitized

received aggregate signal **(Fig. 25, FIFO 140)**; and a processor continually monitoring the contents of said buffer, extracting control information from said control channel **(Fig. 3, CCU 29)**, and extracting data packets destined for said terminal from one or more of the data channels in response to the extracted control information identifying the packet data as destined for said terminal **(Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46)**.

8. With regard to claims 2, 3, 11 and 12, Panech et al. discloses that the carriers are transmitted as framed baseband signals (raw baseband data) wherein the frames contain one or more data channels and the control channel **(col. 14, lines 52-60)**, the frames are stored one frame at a time **(Fig. 25, FIFO 140)**, and the control information is extracted to determine whether the frame is intended for the destination channel **(Fig. 3, CCU 29, CCU 29 performs the same functions as the CCU 18 in the base station, namely, it processes control information from the RCC for channel and data assignment, col. 9, lines 61-65; the RCC provides out-of-band signaling when necessary, col. 22, lines 42-46)**.

9. With regard to claims 5, 14, and 18, Panech et al. discloses that the terminal comprises a demodulator for demodulating the received signal to a baseband signal prior to ADC conversion **(col. 65, line 63 to col. 66, line 3)** prior to being buffered in the terminal **(*See Id.*, wherein the processed signal is frequency- and bit-tracked)**.

10. With regard to claim 6, Panech et al. discloses that the demodulation performed is quadrature **(col. 64, lines 48-52)**.

11. With regard to claims 8 and 21, Panech et al. discloses that discloses that the means for assigning the data packets includes a means to dynamically assign the data to one or more channels **(Fig. 2, channel control unit (CCU) 18 controls the TDMA channel assignments; *see also* col. 9, lines 54-55)**.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Panech et al. in view of Nagano

13. Claims 7, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above, further in view of Nagano (USP 5,808,463).

14. With regard to claims 7, 16, and 20, Panech et al. does not explicitly disclose that the DSP first decimates then demodulates the control channel. The function of a decimation filter is to remove out-of-band signals and noise. However, Nagano discloses a DSP **(Fig. 3, DSP 4)**, which has a decimation filter **(Fig. 4)**. It is well known that decimation filtering can be integrated into the functioning of a DSP. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Panech et al. to integrate a decimation filter, prior to demodulation, because such a modification is well known in the art.

Panech et al. in view of Stuart

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above, and further in view of Stuart (USP 5,666,648).

16. With regard to claim 9, Panech et al. discloses the use of assigned TDMA **(col. 4, lines 53-56)** and assigned TDM **(col. 7, lines 61-65)**. However, Panech et al. does not specifically disclose the use of any one or more of the following channel types: random access or dedicated channels. However, Stuart discloses the use of random access **(col. 15, lines 5-6)** and dedicated channels **(col. 34, lines 46-51)**. It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the system of Panech et al. with the additional features of Stuart because Stuart discloses the use of random access and FDM for lower power output bursts from the transceivers relative to a wideband TDM system and hence, power

savings—a well-known planning feature. Furthermore, Stuart also discloses that a dedicated channel architecture allows a continuous mode of operation **(col. 34, lines 46-51)**, which would allow the use of longer bursts, and, therefore, more data could be transferred per session.

Panech et al.

17. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Panech et al. as applied to claims 1-6, 8, 10-14, 17-19, and 21 above.

18. With regard to claim 15, Panech et al. does not specifically disclose that the control carrier is substantially in the center of the received band. Applicants have not disclosed that placing the control carrier in the middle of the frequency band solves any stated problem or is for any particular purpose other than ease of use. It appears that the performance of the control carrier would result equally well with the control carrier being placed similarly as the control carrier disclosed in Panech et al. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Panech et al. to use the centered placement of the control carrier because such a modification is considered a mere design choice consideration, which fails to patentably distinguish over the prior art of Panech et al. In addition, changing the placement of the control carrier within the received band is interpreted as an optimum value for a known process. A discovery of an optimum value for a known process is obvious engineering. *See* In re Aller, 105 USPQ 233 (CCPA 1955).

Response to Arguments

19. Applicant's arguments filed June 22, 2004 have been fully considered but they are not persuasive.

20. Applicant argues that Panech et al. does not disclose, teach, or suggest that control information and data packets are stored at the terminal and then the data packets are extracted from the stored data channels and then extracted based on the control information *in the same frame* as the data packet (and that the current invention does) **(Applicant's Reply dated 6/22/2004, page 11, lines 13-16)**.

Applicant argues that Panech et al. does not disclose, teach, or suggest the use of multiple access methods in reverse data channels (such as slotted/unslotted ALOHA, etc.) and that the current invention does **(Applicant's Reply dated 6/22/2004, page 12, lines 3-7)**. Applicant further argues that the current invention has the flexibility to support these features **(*see Id.*)**.

Applicant further argues that Panech et al. does not disclose, teach, or suggest that the present invention uses FDM to separate the control channel in order for the terminals to continually monitor the control channel **(Applicant's Reply dated 6/22/2004, page 12, lines 8-15)**.

In response to applicant's argument that the reference fails to show these certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in any of the rejected claims. Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

22. Applicant argues that Panech et al. does not disclose, teach, or suggest a packet communications system. Applicant also argues that Panech et al. is a circuit-switched system which uses only assigned channels for carrying voice traffic. However, Panech et al. does, in fact, disclose the use of packets. For example, computer circuit information signals **(col. 1, lines 36-37)**, RSC-232C standard data communication connections for 9600 baud rate data transmissions **(col. 9, lines 2-3)**, digitized voice sent through voice codec units **(col. 9, line 42)**, voice codec packets **(col. 22, lines 34-35)**, system frame formats with 45 microsecond symbol transmission rate **(col. 14, lines 43-51)**, twelve bit code words **(col. 21, lines 35-41)**, eight-symbol unique words **(col. 22, lines 65-66)**, packetized data **(col. 45, lines 22-24)**, and voice packets **(col. 52, line 36)**.

23. Applicant argues that Panech et al. does not disclose, teach, or suggest that the RCC would be continuously monitored **(Applicant's Reply dated 6/22/2004, page 12, lines 8-15)**. Panech et al. discloses that the RCC control information is either monitored at every frame (frame search), or continuously monitored after synchronization **(col. 55, lines 31-41)**.

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A Mais whose telephone number is (703) 305-6959. The examiner can normally be reached on 8:00-4:30.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

15 July 2004

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600